California Energy Commission

STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation GFO-16-602 – Natural Gas Fueling Infrastructure Application Manual

California Energy Commission

Edmund G. Brown Jr., Governor

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ABSTRACT

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies." Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the ARFVTP through January 1, 2024.

AB 118 also directs the California Air Resources Board (ARB) to develop guidelines to ensure air quality improvements. The ARB Air Quality Improvement Program (AQIP) Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the AQIP*. The AQIP Guidelines require the Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343). As provided by 13 CCR § 2343, this Localized Health Impacts Report is required to be available for public comment for 30 days prior to the approval of projects.

This Localized Health Impacts Report analyzes the combined impacts in the communities, including exposure to air contaminants or localized air contaminants, or both, and including, but not limited to, communities of minority populations or low-income populations, as declared by the natural gas fueling infrastructure proposers or as determined by Energy Commission staff. Appendix A, Localized Health Impact Report Assessment Method, describes the analysis used for this Localized Health Impacts Report.

Keywords: Air pollution**,** air quality, Air Quality Improvement Program (AQIP), California Air Resources Board (ARB), alternative fuel, Assembly Bill (AB) 118, California Environmental Quality Act (CEQA), criteria emissions, demographics, direct current (DC), environmental justice (EJ) indicators, Environmental Justice Screening Method (EJSM), electric vehicle (EV), greenhouse gas emissions (GHG), localized health impact (LHI)

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EXECUTIVE SUMMARY

Under the *California Code of Regulations Title 13, (CCR § 2343),* this Localized Health Impacts Report describes the alternative fuel demonstration projects proposed for Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) funding that may or may not require a conditional or discretionary permit or environmental review, such as conditional use permits, air quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. This report does not include projects that require only residential building permits, mechanical/electrical permits, or fire/workplace safety permits, as these are determined to have no likely impact on the environment.

The California Energy Commission is required to assess the localized health impacts of the projects proposed for ARFVTP funding. This Localized Health Impacts Report focuses on the potential impacts projects may or may not have on a particular community, particularly those communities that are considered especially vulnerable to emissions increases. For high-risk communities, this report assesses the impacts from criteria emissions/air toxics and the air quality attainment status.

Environmental justice communities, low-income communities, and minority communities are considered to be the most impacted by any project that could result in increased criteria and toxic air pollutants within an area because these communities typically have the most significant exposure to the emissions. Assessing projects and the communities surrounding them is important because of the health risks associated with these pollutants. Preventing health issues from air pollution in any community is important, but it is especially important to minimize any negative impacts in communities that are already considered to be at risk due to their continued exposure to these contaminants.

The projects in this Localized Health Impacts Report are assessed for potential health impacts for the communities in which they will be located. Based on this analysis, it is not anticipated that implementing these projects will have negative impacts because there will not be a net increase in criteria and toxic emissions, specifically in those communities that are considered most vulnerable. Potentially, the projects stand to provide improved quality of life through cleaner air.

CHAPTER 1:
Projects Proposed for Funding

On September 7, 2016, the California Energy Commission released a competitive grant funding opportunity titled "Natural Gas Fueling Infrastructure Application Manual" (GFO-16-602) under the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This grant opportunity was an offer to fund projects that will establish or expand infrastructure necessary to store, distribute, and dispense compressed natural gas for use in natural gas vehicles.

On December 20, 2016, the Energy Commission posted the notice of proposed awards (NOPA) for GFO-16-602, resulting in three projects proposed for funding. This Localized Health Impacts Report assesses and reports on the potential localized health impacts of the proposed projects with public review and comment for a 30-day period.

This chapter summarizes the projects proposed for Energy Commission funding. Table 1 provides the applicant, project name, project address, and environmental justice (EJ) indicators. (See Appendix A.)

Table 1: Proposed Projects for Natural Gas Fueling Infrastructure Application Manual

Applicant	Project Name	Project Address	EJ Indicator(s)
Lemoore Union High School District	Lemoore CNG Expansion Project	867 Iona Avenue Lemoore, California 93245	Poverty, Unemployment, Age, and Minority
Kings Canyon Unified School District	Central California Air Restoration	1600 South Apple Avenue Reedley, California 93654	Poverty, Unemployment, Age, and Minority
Exeter Unified School District	CNG Fueling Station – Exeter USD	1105 East Rocky Hill Drive Exeter, California 93221	Poverty, Unemployment, Age, and Minority

Source: California Energy Commission staff

Lemoore CNG Expansion Project

The facility is an existing compressed natural gas (CNG) fueling station. The site is within one mile of one school, three day care centers, and no medical offices/hospitals.

Project Generated Emissions

It is anticipated that the completion of this project will help reduce air emissions within the area. Expanding the compression capacity of the existing CNG station will grow the fleet of buses, City vehicles as well as provide a more reliable fueling station to the public to keep up with growing demand for CNG in the area.

Project Health Impacts

According documentation submitted for the California Environmental Quality Act, there will be no anticipated project health impacts to the surrounding communities.

Project Summary

The Lemoore Union High School District (LUHSD) seeks to enhance its existing CNG infrastructure by installing two additional 75 standard cubic foot/minute compressor units and associated valve panels and controls, one transit fuel pump, and a protective shade structure over the CNG fast fill stations. Based on the growing demand of CNG in the area, the current pair of compressors was replaced in August 2016 with new compressors due to being overworked. Maintenance costs have continued to rise since the plant opened in September 2012, and this past school year, both compressors were down simultaneously for eight days, forcing the district to find an alternative CNG fuel site. LUHSD needs a more reliable and larger capacity compressor solution.

The estimated environmental benefits would be to double the maximum annual throughput, or production, of the existing station to a potential of 314,400 therms after the expansion.

Central California Air Restoration Project

The project site is the Central Valley Transportation Center (CVTC). The CVTC is where the new infrastructure for a time-fill/slow-fill station (refill vehicles over long periods of time, during idle time, generally overnight) will be placed. The project site is within one mile of two schools, one day care center, and one medical office/hospital.

The site consists of the following: Kings Canyon Unified School District (KCUSD) transportation administration and vehicle maintenance facilities; City of Reedley Public Works Department and associated vehicle maintenance yard; CNG fueling facilities, solar collection, charging facilities all open to the public; auxiliary facilities, fuel storage, and associated dispensers (such as ethanol, biodiesel, ultra-low-sulfur diesel, and unleaded regular gasoline); The KCUSD transportation administrative building, which includes 23 bays for vehicle maintenance, repair, inspection, and wash racks, as well as office, storage, shop, and staff support offerings; and KCUSD's new 11,000-square-foot educational learning center. The educational center will offer vocational training, including education and training in mechanics, operational safety and

maintenance of alternative fuel vehicle technology, and alternative fuel infrastructure technology.

Project-Generated Emissions

It is anticipated that there will not be any generated emissions with the project. The machinery is run by electricity, and KCUSD has current CNG fueling stations on site.

Project Health Impacts

According documentation submitted for the California Environmental Quality Act (CEQA), there will be no anticipated project health impacts to the surrounding communities.

Project Summary

The environmental benefits from the project are more vehicles using clean-burning fuel, which results in cleaner air for the community in which KCUSD is stationed, as well as the surrounding communities. The project will benefit a largely disadvantaged community of nearly 10,000 students within the district. The project will also directly benefit the community of Reedley and its 25,500 residents, while providing benefits to neighboring communities of Dinuba (23,700 residents), Fowler (6,300 residents), and Orange Cove (9,600 residents).

CNG Fueling Station – Exeter USD

The proposed project will be constructed in the current Transportation Department yard that houses buses, vans, maintenance trucks, tractors, mowers and trailers. There is an existing diesel filling station including two large storage tanks. The proposed CNG fueling station will tie into the gas line that is near the end of the bus parking area toward the center of the transportation yard. The project is not anticipated to significantly alter the physical operations or disturb the current layout of the facility nor will it significantly impact emission, noise, or operations of the surrounding businesses and facilities. The Exeter Unified School District (EUSD) operates an alternative education school site adjacent to the transportation yard, and the city recreational facilities are adjacent to the site. The proposed site is within one mile of three schools, two day care centers, and one medical office/hospital.

Project-Generated Emissions

This project will further enhance EUSD's efforts to reduce harmful emissions by increasing the use of the CNG bus fleet. The natural gas line and meter are already within the transportation yard, making the connection to the supply easy and economical. EUSD anticipates there will be no need to deliver fuel via trucks or other means, further reducing overall emissions produced. According to EUSD, there will not be any increase in traffic to this location as the project will only provide for increased use of CNG buses and a decreased use of diesel-powered buses.

Project Health Impacts

According documentation submitted for CEQA, there will be no anticipated project health impacts to the surrounding communities.

This project will further reduce pollutants and toxic air contaminants by decreasing the use of diesel fuel buses.

Project Summary

The project will consist of equipment to install and operate a minimum of eight slow-fill stations and two fast-fill stations. The project will require electricity upgrade to most efficiently operate the equipment. It will require the construction of a concrete slab to house the equipment within a fenced area roughly 13 feet by 24 feet. The gas line and meter are already in place next to where the equipment will be installed, which makes the project more economically feasible. The most significant construction activity will be the trenching for both the electrical power supply and the gas supply to the filling stations.

This project will provide the most efficient and effective use of the CNG bus fleet and minimize harmful emissions through the reduced use of diesel fuel-powered buses. By having the CNG fueling station within the EUSD transportation yard, it will reduce employee costs, increase the amount of natural gas consumption, and reduce harmful emissions.

CHAPTER 2:
Approach

The Localized Health Impact Report (LHI Report) Assessment Method in Appendix A assesses communities potentially impacted by air pollution and possibly benefitted by the natural gas fueling infrastructure projects. The California Air Resources Board's (ARB) *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution for Assembly Bill (AB) 32 Assessments* is also used to integrate data to identify low-income communities that are highly impacted by air pollution.[1] Other resources used in this assessment are the *California Infrastructure State Implementation Plans,* [2] which contain publicly noticed air quality attainment plans, and the *Green Book Nonattainment Areas for Criteria Pollutants*[3].

For this LHI Report, the Energy Commission interprets "permits" to connote discretionary and conditional use permits because they require a review of potential impacts to a community and the environment before issuance. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, the Energy Commission staff does not assess projects requiring only ministerial level permits in this report.

The cities where the projects will be located are in nonattainment zones for ozone, PM[4] 2.5, and PM 10. Table 1 shows the EJ indicators for the three projects, that is, minority populations, low incomes, and highly sensitive groups based on age (individuals younger than 5 years of age and older than 65 years of age). Table 2 shows the demographics, indicating all three three cities are classified high-risk communities, according to the Environmental Justice Screening Method (EJSM).

Staff collected information about predicted emissions from all the project proposals. Activities conducted are not expected to have significant impact on emissions. Expanding the natural gas fueling infrastructure in California will lead to reduced local greenhouse gas emissions and reduced petroleum use.

1 California Air Resources Board, *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution, 2010* (Sacramento, California).
2 http://www.arb.ca.gov/planning/sip/sip.htm.
3 http://www.epa.gov/oaqps001/greenbk.
4 "Particulate matter" is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled, and is a chief component of exhaust emissions from heavy-duty diesel engines.

CHAPTER 3:
Summary

If funded, the proposed projects would result in establishing or expanding the infrastructure necessary to store, distribute, and dispense compressed natural gas for the use in natural gas vehicles and will help achieve both energy and climate change goals. The projects will increase the use of natural gas vehicles. Natural gas vehicles displace gasoline and diesel vehicles and, therefore, reduce tailpipe pollutants, especially in critical areas of the state.

The anticipated impacts to the communities where the projects are to be located are positive in terms of air quality and anticipated greenhouse gas reductions.

As indicated in Table 1, with further detail in Table 2, all three cities are high-risk communities, as identified in Appendix A. The demographic data presented in this LHI indicate higher concentrations of minority populations, especially Hispanic, along with children under 5, and those with low incomes and/or facing high employment. The anticipated health benefits from the proposed projects for the people in these communities, especially the disadvantaged communities, is highly likely, if not certain, to be positive.

CHAPTER 4:
Acronyms

Air Quality Improvement Program (AQIP)

Air Resources Board (ARB)

Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP)

Assembly Bill (AB)

California Code of Regulations (CCR)

California Environmental Quality Act (CEQA)

Central Valley Transportation Center (CVTC)

Compressed natural gas (CNG)

Environmental justice (EJ)

Environmental justice screening method (EJSM)

Exeter Unified School District (EUSD)

Grant funding opportunity (GFO)

Greenhouse gas (GHG)

Kings Canyon Unified School District (KCUSD)

Lemoore Union High School District (LUHSD)

Localized health impact (LHI)

Notice of proposed awards (NOPA)

Particulate matter (PM)

State Implementation Plan (SIP)

Table 2: Environmental Justice (EJ) Indicators Compared With California
Yellow highlighted areas indicate numbers (percentages) that meet the definition for EJ indicators.
An asterisk may signify a default to county demographics and/or labor information.

	Number of EJ Indicators by Category	Below Poverty Level (2014)	Black Persons (2010)	American Indian and/or Alaska Native (2010)	Asian and/or Pacific Islander (2010)	Persons of Hispanic or Latino Origin (2010)	Persons Under 5 Years of Age (2010)	Persons Over 65 Years of Age (2010)	Unemployment Rate (November 2016)
California		**15.3%**	**6.2%**	**1.0%**	**13.0%**	**37.6%**	**6.8%**	**11.4%**	**5.3%**
		>15.3%	**>30%**	**>30%**	**>30%**	**>30%**	**>8.16%**	**>13.8%**	**>5.3%**
Exeter	4	29.1%	0.6%	1.7%	1.3%	45.5%	8.7%	11.5%	10.3%
Lemoore	4	15.6%	6.4%	1.4%	8.2%	40.0%	9.0%	7.3%	8.3%
Reedley	4	26.7%	0.7%	1.1%	3.3%	76.3%	9.2%	9.5%	9.0%

Sources: Unemployment information from the State of California, Employee Development Department Labor Market Information Div.: http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html#Tool. U.S. Census Bureau, http://www.census.gov/quickfacts/table/PST045215/0664000,06,00 and http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

APPENDIX A:
Localized Health Impact Report Assessment Method

Based on the California Energy Commission's interpretation of the *California ARB* AQIP *Guidelines*, this LHI Report assesses the potential impacts to communities because of the projects proposed by the ARFVTP. This report is prepared under the *California ARB AQIP Guidelines, California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR § 2343)*:

"(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider environmental justice consistent with state law and complete the following:

> (A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.
>
> (B) Projects must be selected and approved for funding in a publicly noticed meeting."

This LHI Report is not intended to be a detailed environmental health impact analysis of proposed projects nor is it intended to substitute for the environmental review conducted during the California Environmental Quality Act (CEQA) review. This LHI Report includes staff's application of the Environmental Justice Screening Method (EJSM) to identify projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks[5].

The EJSM was developed to identify low-income communities highly affected by air pollution for assessing the impacts of climate change regulations, specifically Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006. The EJSM integrates data on (i.) exposure to air pollution, (ii.) cancer risk, (iii.) ozone concentration, (iv.) frequency of high ozone days, (v.) race/ethnicity, (vi.) poverty level, (vii.) home ownership, (viii.) median household value, (ix.) educational attainment, and (x.) sensitive populations (populations under 5 years of age or over 65 years of age).

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5 California Air Resources Board (ARB). *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making, 2010.* (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

To determine high-risk communities, environmental justice (EJ) indicators for locations of the natural gas fueling infrastructure projects are compared to data from the U.S. Census Bureau or other public agency. Staff identifies high-risk communities by using a two-part standard. For a community to be considered high- risk, for this assessment, it must meet both Parts 1 and 2 of this standard.

Part 1:

- Communities located in nonattainment air basins for ozone, PM 10 or PM 2.5

Part 2:

- Communities having more than one of the following EJ indicators: (1) minority, (2) poverty, (3) unemployment and (4) high percentage of population under 5 years of age and over 65 years of age. The EJ indicators follow:
    - A minority subset represents more than 30 percent of a given city's population.
    - A city's poverty level exceeds California's poverty level.
    - A city's unemployment rate exceeds California's unemployment rate.
    - The percentage of people living in that city are younger than 5 years of age or older than 65 years of age is 20 percent higher than the average percentage of persons under 5 years of age or over 65 years of age for all of California.